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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,115	01/08/2002	Junichi Katsuki	2204-012023	4472

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EXAMINER

LEROY, DAVID H

ART UNIT

PAPER NUMBER

1742

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/041,115

Applicant(s)

KATSUKI ET AL.

Examiner

David H. LeRoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-10 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other:

**DETAILED ACTION**

Applicant's election with traverse of Claims 3, 5, and 6 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the same search would be required for both product and method claims, and it is the other steps set forth in the process of Claims 4, 7-10 which establish the patentability of these claims. This is not found persuasive since the austenitic stainless steel of Group I can be made by a materially different process such as the process of Yamauchi et al. in view of Kasuhisa et al. The examination of Group I does not require the search of Class 75 Subclass 508, which is required by examining Group II. Therefore, the examination of both Group I and II would result in a serious burden on the Examiner. The requirement is still deemed proper and is therefore made FINAL.

Thus, Claims 3, 5 and 6 are under consideration in this action.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the

**Yamauchi et al. U.S. Patent No. 5,407,493**

1. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al. U.S. Patent No. 5,407,493.

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2. Yamauchi et al. teach a stainless steel composition with  $\text{Al}_2\text{O}_3$ - $\text{MnO}$ - $\text{SiO}_2$  inclusions (e.g., See Col. 5 lines 20-43) that has improved fracture resistance (that meets the preamble of less susceptible to cracking). In Col 5 lines 22-40, Yamauchi et al's  $\text{Al}_2\text{O}_3$ - $\text{MnO}$ - $\text{SiO}_2$  inclusions are represented in weight percent by 9 points of a phase diagram (See Fig. 1) and include ranges of  $\text{Al}_2\text{O}_3$  of 5-33 wt. % and  $\text{SiO}_2$  of 27-67 wt.%. Elemental components of Yamauchi et al.'s composition are set forth in Table I Examples A-H and ranges of individual components specified in Cols. 7-8 as consisting of: 0.01-0.2 wt.% C, 0.1-2 wt.% Si, 0.1-2 wt.% Mn, 4-11 wt.% Ni, 13-20 wt.% Cr, 0.01-0.2 wt.% N, 0.0005-0.0025 wt.% Al, 0.08-0.9 wt.% Cu, 0.009 wt.% or less S and the balance Fe (See also Claim 2).

3. Yamauchi et al's ranges of elements overlap the ranges of approximately 0-0.04 mass % C, approximately 0.1-1.0 mass % Si, approximately 0-5.0 mass % Mn, approximately 0-0.0060 mass % S, approximately 0-0.003 mass % Al, approximately 5-9 mass % Ni, approximately 15-20 mass % Cr, approximately 0-0.035 mass % N, approximately 1.0-5.0 mass % Cu and the balance being Fe except inevitable impurities. Therefore, since the claimed ranges "overlap or lie inside ranges disclosed by the prior art", a prima facie case of obviousness exists. See *In re Wertheim*, 541 F. 2d 257, 191 USPQ 90 (CCPA1976); *In re Woodruff*, 919 F. 2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) See MPEP 2144.05.

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4. With respect to the nonmetallic MnO-SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> inclusions in Claim 3, Yamauchi et al.'s has Al<sub>2</sub>O<sub>3</sub>-MnO-SiO<sub>2</sub> inclusions. Moreover, Yamauchi et al.'s ranges of Al<sub>2</sub>O<sub>3</sub> of 5-33 wt. % and SiO<sub>2</sub> of 27-67 wt.% overlap the ranges of not less than approximately 15 mass % SiO<sub>2</sub> and not more than approximately 40 mass % Al<sub>2</sub>O<sub>3</sub> of the claimed invention. Therefore, since the claimed ranges "overlap or lie inside ranges disclosed by the prior art", a prima facie case of obviousness exists. See MPEP 2144.05.

5. With respect to the "d" and "a" values with their mathematical formulae in Claim 6, firstly, because of the claimed language of "preferably", this limitation is not positively claimed. Secondly, although Yamauchi et al does not disclose a "d" or "a" values or their mathematical formula, however, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. Therefore, the claimed "d" and "a" values would have been expected in Yamauchi et al. since the individual concentrations of Ni, C, N, Mn, Cu and Cr overlap the concentrations of these elements in the claimed invention.

**Yamauchi et al. U.S. Patent No. 5,407,493 in view of Katsuhisa et al. JP Pub. No. 09-263905.**

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. U.S. Patent No. 5,407,493 in view of Katsuhisa et al. JP Pub. No. 09-263905.

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7. Yamauchi et al. is discussed in paragraph 2 and 3 above. Yamauchi et al. does not teach including up to a max. of 0.03 mass % B or the "d" or "a" values or their mathematical formula of the claimed invention.

8. Katsuhisa et al. teach "a" and "d" values and their mathematical relationship (See Claim 1 of the translation). Katsuhisa et al. also teach an austenitic stainless steel composition that contains 0.03% B or less (See Claim 2 of translation) which overlaps the claims B range. Katsuhisa et al. recognize the use of B where S content is 0.0030% or less as in the claimed invention (See translation p.1 of Detailed Description [007] last sentence). Katsuhisa et al. teach that B raises the ability for hot working of their alloy (See translation p. 3 of Detailed Description [0031]).

9. With respect to B in Claim 5, therefore, it would have been obvious to one of ordinary skill in the art to add up to 0.03 mass % B to Yamauchi et al.'s alloy as taught by Katsuhisa et al. (See translation page 1 of Detailed Description [007]). One of ordinary skill in the art would have been motivated to do this due to the expected advantages of B for improving hot workability as taught by Katsuhisa et al. (See translation p. 3 of Detailed Description [0031]).

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10. With respect to the “d” and “a” values with their mathematical formulae in Claim 6, because the mathematical relationship in a substantially similar steel composition is well known in the art, as evidenced by Katsuhisa et al., it would have been obvious to one of ordinary skill in the art to use the same mathematical relationship in Yamauchi et al.’s alloy for the expected advantages of obtaining an austenitic stainless steel having good elasticity as disclosed by Katsuhisa et al. (See translation page 1 of Detailed Description [007]).

Furthermore, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. Therefore, the claimed “d” and “a” values would have been expected in Yamaguchi et al. since the composition of Yamauchi et al. is substantially the same composition.

### Conclusion

1. The prior art of record and not relied upon is considered pertinent to applicant’s disclosure.

**U.S. Pat. No. 5,089,224 to Bletton et al.** relates to a resulphurized Ni-containing austenitic stainless steel having oxide inclusions.

**U.S. Pat. No. 5,314,549 to Misso et al.** relates to a Ni-containing stainless steel having oxide inclusions.

**U.S. Pat. No. 5,496,514 to Yamauchi et al.** relates to a Ni-containing stainless steel sheet having oxide inclusions.

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**U.S. Pat. No. 5,651,937 to Descaves** relates to a Ni-containing austenitic stainless steel having oxide inclusions.

**U.S. Pat. No. 6,123,784 to Havette** relates to a Ni-containing austenitic stainless steel having oxide inclusions

### **Inquiries**

Any inquiry concerning this communication should be directed to David H. LeRoy at telephone number 703-305-5793. The examiner can normally be reached 7a.m.-5:30 p.m. Monday-Thursday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

DHL

4/28/03

  
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